**Job Title:** Research Associate  
**Vacancy Ref:** A3495

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<thead>
<tr>
<th><strong>Department/College:</strong></th>
<th>Engineering</th>
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<td><strong>Present Grade:</strong></td>
<td>6P</td>
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<tr>
<td><strong>Directly responsible to:</strong></td>
<td>Prof Ihtesham ur Rehman</td>
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<td><strong>Supervisory responsibility for:</strong></td>
<td>Some supervision of postgraduate students and clinical fellows</td>
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**Other contacts**

**Internal:**  
Prof. Craig Williams, Consultant Microbiologist at University Hospitals of Morecambe Bay NHS Foundation Trust

**External:**  
Dr Niall Gallen (CTO), Glyconics, Trafalgar House, Meridian Way, Meridian Business Park, Norwich, Norfolk, NR7 0TA

**Major Duties:**

1. Improving scientific understanding of COVID and its accurate and rapid detection by analysing saliva and nasopharyngeal swabs by using Infrared spectroscopy.

2. Working at University Hospitals of Morecambe Bay NHS Foundation Trust and other hospitals to access in virology/microbiology laboratory with access to COVID-19 test swabs (POS/NEG) and PCR capabilities. An in situ spectroscopic capability (Health & Safety) to perform the Infrared measurements to optimise the spectral data acquisition and to develop a robust chemometric model for the device Cloud-based algorithm. Lancaster University (LU) Department of Engineering & Morecambe Bay University Hospitals Trust will provide these key activities.

3. Analysing nasopharyngeal sample swabs, saliva samples and developing spectral acquisition protocols to be written as standard operating procedures ensuring operator safety and measurement efficacy; minimal sample processing step; measurement protocol; spectrometer and the lab cleaning.

4. Data processing and measurement optimisation define data handling and data pre-processing steps; spectral quality assessment to ensure reliable and repeatable results.

5. Develop new protocols to discriminate the presence of the COVID-19 virus from other respiratory viruses.

6. Participation in COMIR project meetings; preparation and presentation of talks, posters and reports to disseminate the results of these studies.

7. Preparation of progress reports for Glyconics/Innovate UK describing the results of the project.

8. Participation in national and international conferences and workshops to present the results of the project to a wider audience and to learn about current advances in the field.

9. Timely interactions with all stakeholders for IP protection and product development

10. Preparation of journal papers for publication of project findings.

11. Participation in (and ultimately taking the lead in) writing new research proposals that build on the expertise in spectroscopy of clinical samples and other interactions developed in this project.